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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,168	09/10/2003	Joy Sawyer Bloom	AD6929 US NA	3753
23906	7590	11/22/2004	EXAMINER	
E I DU PONT DE NEMOURS AND COMPANY			HON, SOW FUN	
LEGAL PATENT RECORDS CENTER			ART UNIT	
BARLEY MILL PLAZA 25/1128			PAPER NUMBER	
4417 LANCASTER PIKE			1772	
WILMINGTON, DE 19805			DATE MAILED: 11/22/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/659,168

Applicant(s)

BLOOM, JOY SAWYER

Examiner

Sow-Fun Hon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/15/03, 07/19/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 6-10 are objected to because of the following informalities:
  - a. Claim 6, should depend on claim 5 instead of claim 3;
  - b. Claim 7, should depend on claim 5 or 6, instead of 3 or 4;
  - c. Claim 8, should depend on claim 7 instead of claim 5;
  - d. Claim 9, should depend on claim 7 or 8, instead of claim 5 or 6;
  - e. Claim 10, should depend on claim 9 instead of claim 7.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102/103***

2. Claims 1-10, 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Long et al. (US 5,969,083)

Regarding claim 1, Long teaches a composition comprising a liquid crystalline polyester (LCP) as a matrix material (abstract) having an onset of melting temperature of greater than 320 °C (Table 1, columns 11-12), and contains at least two fillers (in combination of two or more) (column 6, lines 40-45). The carbon black, graphite, talc and clay fillers (column 6, lines 20-25) are lubricating as defined by Applicant's specification (original claim 4).

Long teaches that the injection-molded liquid crystalline polyesters have very high tensile and flexural resistance properties (column 2, lines 10-15). Thus the claimed wear resistance of at least 1.75 MPa-m/s (50,000 psi-fpm) is either inherent in the composition, or the result of routine

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experimentation by one of ordinary skill in the art at the time the invention was made, in order to obtain the desired molded article life.

Regarding claim 2, Long teaches that the fillers may be used up to 60 weight percent (column 16, lines 35-40) based on the total weight of the composition. Thus the amount of liquid crystalline polyester can comprise 40 weight percent and above, which overlaps the claimed range of 45-95 % by weight.

Regarding claim 3, Long teaches that the liquid crystalline polyester material has repeat units (residues) of 4-hydroxybenzoic acid (p-hydroxybenzoic acid), 4,4'-biphenol, terephthalic acid and 2,6-naphthalene-dicarboxylic acid (abstract).

Regarding claim 4, Long teaches that the fillers are selected from the group consisting of graphite, carbon black, talc, clay, boron nitride (column 16, lines 20-30), mica (column 16, lines 30-31), carbon fiber, potassium titanate (column 16, lines 15-20) and particulate (fiber) polyimide (column 16, lines 35-36).

Regarding claim 5, Long teaches that the fillers may be used up to 60 weight percent (column 16, lines 35-40) based on the total weight of the composition, and comprise at least two fillers (in combination of two or more) (column 6, lines 40-45). Thus the claimed first filler amount of 1-20 % by weight, and second filler amount of 1-30 % by weight, are the result of routine experimentation by one of ordinary skill in the art at the time the invention was made, in order to obtain the desired physical properties of the molding composition.

Regarding claim 6, Long teaches that the fillers can be graphite material (column 16, lines 20-30) and carbon fiber (column 16, lines 15-20).

Regarding claim 7, Long teaches that the fillers may be used up to 60 weight percent (column 16, lines 35-40) based on the total weight of the composition, and comprise at least two fillers (in combination of two or more) (column 6, lines 40-45). Thus the claimed third filler amount of 1-20 % by weight, is the result of routine experimentation by one of ordinary skill in the art at the time the invention was made, in order to obtain the desired physical properties of the molding composition.

Regarding claim 8, Long teaches that one of the fillers can be mica (column 16, lines 30-31).

Regarding claim 9, Long teaches that the fillers can be in combination of two or more) (column 6, lines 40-45) and that that the fillers may be used up to 60 weight percent (column 16, lines 35-40) based on the total weight of the composition. Thus a fourth filler in the claimed amount of 0-15 % by weight is the result of routine experimentation by one of ordinary skill in the art at the time the invention was made, in order to obtain the desired physical properties of the molding composition.

Regarding claim 10, Long teaches that one of the fillers can be particulate (fiber) polyimide (column 16, lines 35-36).

Regarding claim 12, Long teaches an article (thin cross-sectional electrical components) molded from the composition (column 2, lines 35-40).

*Allowable Subject Matter*

3. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The closest prior art US 5,969,083 fails to teach or suggest the specific composition which comprises about 65 % by weight of liquid crystalline polyester material having an onset of melting temperature of greater than 320 °C, and contains four fillers wherein said fillers comprise (A) about 10 % by weight of graphite; (B) about 10 % by weight of carbon fiber; (C) about 5 % by weight of mica; and (D) about 10 % by weight of particulate polyimide, wherein the composition has an onset melting temperature of at least 320 °C and wear resistance of at least 1.75 MPa-m/s (50,000 psi-fpm). Applicant demonstrates that the specific composition recited shows unexpected results in terms of wear resistance performance (Applicant's specification, page 11).

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Hon.

Sow-Fun Hon

11/12/07